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ABSTRACT

The family and the school are important socializing environments throughout adolescence. Using longitudinal data, this report examines the effects on students of varying degrees of participation in school and family life. Degrees of participation include the extent of participation in family decisions, the extent of restriction on activities by formal rules at home, the extent of participation in classroom decisions, and the extent of self-direction in classroom instruction. The total population of students in selected grade levels at the elementary, middle, and senior high school levels were surveyed in the spring of 1973 and again in the spring of 1974. The two surveys yielded a longitudinal sample of 5,454 students for whom complete survey data were available. Results of analyses suggested that sequential and steady change in the direction of increased participation by youngsters in decision-making at home and at school may be essential for continued progress in developing mature attitudes and behaviors. It was clear that change in student behavior can be more fully understood with concurrent consideration of change in the real environmental demands for growth. Neither the student nor the socializing environment was static. (Author/RL)

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A LONGITUDINAL STUDY OF SCHOOL AND FAMILY EFFECTS ON STUDENT DEVELOPMENT

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Introductory Statement

The Center for Social Organization of Schools has two primary objectives: to develop a scientific knowledge of how schools affect their students, and to use this knowledge to develop better school practices and organization.

The Center works through four programs to achieve its objectives. The Studies in School Desegregation program applies the basic theories of social organization of schools to study the internal conditions of desegregated schools, the feasibility of alternative desegregation policies, and the interrelation of school desegregation with other equity issues such as housing and job desegregation. The School Organization program is currently concerned with authority-control structures, task structures, reward systems, and peer group processes in schools. It has produced a large-scale study of the effects of open schools, has developed Student Team Learning Instructional processes for teaching various subjects in elementary and secondary schools, and has produced a computerized system for school-wide attendance monitoring. The School Processes and Career Development program is studying transitions from high school to post secondary institutions and the actualization of labor market outcomes. The Studies in Delinquency and School Environments program is examining the interaction of school environments, school experiences, and individual characteristics in relation to in-school and later-life delinquency.

This report, prepared by the School Organization program, presents the results of three types of exploratory analyses with longitudinal data. The analyses examine the effects of family and school environments on student development.

Abstract

The family and the school are important socializing environments throughout adolescence. Using longitudinal data, this report examines the effects on students of varying degrees of participation in school and family life. Degrees of participation include the extent of participation in family decisions, the extent of restriction on activities by formal rules at home, the extent of participation in classroom decisions, and the extent of self-direction in classroom instruction.

The results of these and other analyses suggest that sequential and steady change in the direction of increased participation by youngsters in decision-making at home and at school may be essential for continued progress in developing mature attitudes and behaviors. It is clear that change in student behavior can be more fully understood with concurrent consideration of change in the real environmental demands for growth. Neither the student nor the socializing environment is static.

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This report is a limited preprint of a chapter to appear in S. A. Mednick and M. Harway (Eds.), Longitudinal Research in the United States (forthcoming). Parts of the report were presented at the annual meeting of the American Sociological Association, 1978.

worked in small groups without constant direction from teachers, monitored their own progress, and moved about the classroom more freely than students in traditional classes. Cross-sectional analyses already completed suggest that teacher-student shared authority for classroom decisions is linked in important ways to student nonacademic attitudes and to the kinds of student behaviors that are rewarded by teachers (Epstein and McPartland, 1975, 1979; McPartland and Epstein, 1977; McPartland, 1977; Epstein, 1981). Our research also extends knowledge on the importance of parent-child shared authority. Participation in decisions at home is positively related to student development on all academic and affective behaviors for which measures are available (Epstein and McPartland, 1977a, b).

Several substantive issues that pose methodological challenges are addressed in the research reports from this study:

The importance of authority structures and processes for research on effective school and family environments.

The effects of student participation at school and at home on diverse outcomes including achievement and affective measures.

The interaction of school and family experiences on diverse outcomes.

The longitudinal effects of contrasting school and family authority structures on student development.

The difference of effects on students and interpretations using the individual as the unit of analysis and using the classroom, grade level and school environments as the bases for contextual measures.

The comparison of cross-sectional and longitudinal analyses to describe effects on students.

The importance of transition points (change from elementary to middle school or middle to high school) and transition environments (change from innovative to traditional education and traditional to innovative education programs) for development of diverse outcomes.

The influence of authority structures on friendship selection and influence.

The practical implications of the research results for school and teacher's policies about the organization of the classroom.

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The practical implications of the research results for school and teacher's policies about the organization of the classroom.

Four substantive issues and methodological approaches are featured in the work completed to date to confront a controversy in the sociology of education that school effects have been underestimated or incomplete due to restricted theories, research design, and available data (McPartland and Karweit, 1979).

First, most research on school effects has not given attention to interaction effects (Cronbach and Snow, 1977). It may be that school effects are particularly impressive for some students. A guiding hypothesis for this study is that the effects of different classroom organizations on a student will depend on the student's earlier experiences at home and at school. Students from more participatory families may feel more comfortable in more participatory schools, and show greater progress on affective student outcomes. At the same time, students from less participatory home environments may make more progress if given such experiences in school, especially on the outcome of self-reliance. Tests for such interaction effects can be enriched by longitudinal data on early school experiences, and by specific measures of congruence or incongruence of family and school environments.

Second, previous school effects research has all but ignored diverse outcomes of schooling that are less resistent to change than is achievement and more likely to be affected by experiences in contrasting environments (Averch et al., 1972; Jencks et al., 1972). In this study, attitudes, behaviors and indicators of success in school that are theoretically linked to variation in authority structures are examined, along with the traditional measures of standardized achievement test scores that continue to be of interest to educators and researchers.

Third, little attention has been given to more proximate measures of the organization of classrooms or family practices that may be the strongest influences on student outcomes (Karabel and Halsey, 1977;

Sample

Student Survey. The total population of students in selected grade levels at the elementary, middle, and senior high school levels were surveyed in the spring of 1973 and again in the spring of 1974. The students, initially in grades 4, 5, 6, 8 and 11, attended 21 elementary, 8 middle, and 5 high schools at the time of the first survey. After promotion to grades 5, 6, 7, 9 and 12, they attended 23 elementary, 10 middle, and 6 high schools. The sequenced cross-sectional and longitudinal surveys cover the period from preadolescence through adolescence. (See Nunnally, 1973, and Nesselroade and Baltes, 1974 for the benefits of this design.)

Table 1 presents the sample sizes and response rates for both student surveys by grade level. Ninety-three percent and 89% of the registered students were reached in the first and second surveys, respectively, with 75% included in the longitudinal sample. Only one survey administration per school was permitted, so follow-ups of absent or relocated students were not possible. Grade 12 suffered from a combination of problems including students who attended a Vocational-Technical Center part-time, students who dropped out, and some who graduated early. These students were not present for the surveys, although they were registered students. Even with these problems, the characteristics of the sample of 12th graders were not substantially affected and the sample size remains large enough to be useful in analyses.

The two surveys yielded a longitudinal sample of 5,454 students for whom complete survey data are available, and smaller samples of students who were present only at one of the survey administrations.

TABLE 1

Samples and Response Rates for Survey I and Survey II

Time of Survey and Grade 1/	Number of Students In Survey	Percent in Longitudinal Sample	Official Enrollment Survey I (Spring '73)	Official Enrollment Survey II (Spring '74)	Response Rate Wave I	Response Rate Wave II
I 4 only 2/	364					
II 5 only	385					
I 4 & II 5	1315	78%				
I 4 total	1679		1716		98%	
II 5 total	1700			1830		93%
I 5 only	304					
II 6 only	399					
I 5 & II 6	1299	81%				
I 5 total	1603		1652		97%	
II 6 total	1698			1782		95%
I 6 only	306					
II 7 only	358					
I 6 & II 7	1212	80%				
I 6 total	1518		1629		93%	
II 7 total	1570			1692		93%
I 8 only	359					
II 9 only	419					
I 8 & II 9	1038	74%				
I 8 total	1397		1518		92%	
II 9 total	1457			1670		93%
I 11 only	457					
II 12 only	345					
I 11 & II 12	590	56%				
I 11 total	1047		1276		82%	
II 12 total	935			1260		74%
ALL GRADES COMBINED:						
Wave I only	1790					
Wave II only	1906					
Waves I and II	5454	75%				
Wave I total	7244		7791		93%	
Wave II total	7360			8234		89%

1. Roman numerals indicate time of survey: I = Spring of 1973; II = Spring of 1974. Arabic numbers indicate grade level at time of survey (e.g. 4 = grade 4, etc.).

2. The lines labeled 'only' show number who responded to a single wave of the survey administration and not to the other wave. For example, "I 4 only" are students who responded to the first survey in grade four, but not to the second survey; 'II 5 only' responded to the second survey in grade five, but did not participate in the first survey.

These single survey students serve as control groups for checking characteristics of the longitudinal sample. For example, with some limitations, one can compare characteristics and scores of students who left the school after one year or entered as new students with the characteristics and scores of students in the longitudinal sample.

The sample includes students who are at critical points of their schooling--entrance from elementary to middle school (grade 5 in survey one to grade 6 in survey two) and from middle to high school (grade 8 to grade 9) as well as non-transitional students in middle school or high school for both surveys (grades 6-7 and grades 11-12). Grade 12 may be a pivotal year in schooling for the demands on students for postsecondary plans.

Teacher survey. Each year the students were surveyed, an anonymous sample of teachers returned mail surveys to the research site. The first survey included 254 elementary and 268 secondary teachers, and the second survey included 192 elementary and 181 secondary teachers. The teachers are identified by school and grade level only, so there is no way to associate information supplied by the teachers with individual students in a specific classroom. The data provided by the teachers has been most useful for validating measures derived from student reports by grade level, and for the historic data teachers provided on the architectural design and educational program characteristics of their schools for five previous years.

Study design. The total population sampling permitted interesting design and analysis opportunities. First, multiple matrix sampling was employed. This technique enables the researcher to administer different questionnaires to random subgroups of students so that many related,

independent and dependent measures can be included in a fixed-time (one hour) survey. Each group of respondents remains large enough to assure that subgroup analyses can proceed. In the first survey, six forms and in the second survey, three forms of the questionnaire were administered containing true-false, multiple choice, sociometric and open-ended questions. A basic set of items for the total sample was exactly the same on all forms across the two surveys. All other subsets of items were administered to sizeable random subsamples; every combination of important items or scales was answered by at least one-sixth (and more often one-third) of the sample. The questionnaires were arranged by form prior to administration so that a random distribution was assured. Second, the total population longitudinal sample permitted the study of student friendship selection and influence patterns because the students chosen as friends were within the survey population, and all measures were available for the students and their friends. Finally, the large total sample permitted useful numbers of siblings to be identified, so that some tests could be conducted of the validity of measures of family environments.

The study incorporates several basic designs of survey research. The data collections are cross-sectional and longitudinal. The samples of students and teachers permit sociometric, school-level, contextual and individual level analyses. The longitudinal collections include trend, cohort, and panel data. Many opportunities exist, then, for exploration, description and explanation of the socialization of youngsters in school and at home through adolescence.

Sample characteristics. The cooperating district in Maryland

included small city, suburban, and rural communities. The district was chosen because it was one of few in the nation that had developed significant alternative school environments at both the elementary and secondary levels. Moreover, these educational programs had been operating for up to six years, and so represented a stable reoganization of some schools in the county, with students attending distinct environments for a relatively long time. Table 2 provides detailed characteristics of the district in comparison with the United States and the U.S. Urban Fringe. (The sampled district would be considered urban fringe--a Standard Metropolitan Statistical Area, SMSA, that excludes a central city, populated by about 27% of the U.S. population.) Table 3 presents more detailed characteristics of the student population for the 1974 survey. Although the average family in the sampled district is more economically and educationally advantaged than the average American family, the sample is diverse, with significant proportions of the population at all economic and educational levels. We must be cautious about generalizing results of this research to extremely disadvantaged populations, due to the economic and educational advantages of the sample.

Data Collection Procedures

Administration. Student surveys were administered by a special staff trained by the Center for Social Organization of Schools. Two administrators were assigned to each classroom, or one administrator per twenty students in large group (cafeteria) settings. Teachers were requested and agreed to leave the area of administration so their presence would not influence student responses. A standard explanation was presented to the students describing the purpose and procedures of the survey, the confidentiality of responses, and the option of participation.

Table 2

Comparison of the Sampled County Population Statistics with United States and U.S. Urban Fringe[a/]

		Sampled County	U.S.	Urban Fringe
1.	Race (% white)	91%	88%	
2.	Age (% 18 years or older)	60.8%	65.6%	
3.	Median age	26.7	28.3	
4.	Median school years completed	12.4	12.1	12.3
5.	Farm (% of population)	3.0	1.3	
6.	Percent urban	34.8	73.5	
7.	Percent males employed as			
	Professional/Manager	36.4	23.2	
	Clerk/Sales	24.8	25.1	
	Craftsmen/Foremen	14.0	13.9	
8.	Per capita income	$3,819	$3,119	$3,745
9.	Median family income	$13,461	$9,586	$13,877
10.	Family income, percent:			
	Less than $3,000	3.8%	10.3%	
	$3,000-4,999	4.4%	10.0%	
	5,000-6,999	6.7%	11.9%	
	10,000-14,999	29.6%	26.6%	
	15,000-24,999	32.2%	16.0%	
	Over 25,000	8.8%	4.6%	

a/ From U.S. Department of Commerce, 1972, for comparisons at time of survey administration.

Table 3

Characteristics of Sample by Grade Level[a/]

Grade	6	7	9	12
N (1974)	1698	1570	1457	935
Gender				
% male	50.3	51.0	49.0	47.3
% female	49.7	49.0	51.0	52.7
Race				
% white	88.4	87.7	89.7	88.6
% black	11.6	12.3	10.3	11.4
Parents' education[b/]				
% 24 or more years completed	72.5	68.9	61.7	59.7
% under 24 years completed	27.5	31.1	38.3	40.3
Location of School Attended				
% rural	12.4	12.2	12.9	14.5
% suburban	49.9	50.8	55.3	72.3
% small city	37.7	37.0	31.9	13.2
Standardized Achievement				
Name/date	ITBS-1973[c/]	ITBS-1974	ITBS-1974	TAP (Reading) 1974
Grade Equivalent				
Range	2.1-9.1	4.0-11.5	4.3-12.6	18-79[d/]
Average National %ile	54.5	49.9	50.6	--

a/ Data are for sample of students surveyed in 1974. Statistics for the longitudinal sample are about equivalent.
b/ Years of schooling completed by mother and father combined.
c/ Scores are reported for ITBS scores of these students in grade 5. They are untested in grade 6.
d/ For grade 12 standard scores only are reported.

Confidentiality of the data. Each survey was conducted in accordance with federal, school district, and university regulations on the protection of human subjects. The procedures included the filing of an H.E.W. special institutional assurance for the use of human subjects, and gaining approval of the study design and questionnaire by (a) the county school administrators and school board, (b) the university committee on the protection of human subjects, (c) the National Institute of Education, and (d) the Office of Management and Budget (OMB No. 51-R1037).

Student names were replaced with code numbers that were needed to merge the first survey data with the follow-up survey responses and with supplementary tests and records. After all mechanical merges were completed, the information linking students' names and their code numbers was returned to the cooperating school district, so that no one can make connections between individuals and responses. Results of analyses are reported as grouped data, as is typical in sociological studies.

These precautions against an invasion of privacy were part of the normal protection of participants in survey research. Current requirements for research on children in schools include obtaining signed permission slips from the parents of students surveyed. This additional requirement has restricted the nature and extent of research and evaluation in schools by creating barriers to obtaining representative samples. At this writing, the department of HEW is reconsidering the necessity of "over-protecting" human subjects when the school district requests and monitors the research and when students are at no unusual risk. An adequate level of protection against physical or psychological harm and assurance of confidentiality of responses are necessary conditions for research.

The proposed revisions of the rules by HEW that recognize a school's right to evaluate its own programs could assist research on school effectiveness and on the socialization of students.

Measures

The chart below summarizes the major measures of this study and the number of data collections for each. All measures were obtained from students and from school records at the individual level. A common core of items was duplicated exactly on both surveys and for all students to assure a rich source of longitudinal environmental and outcome measures. However, there are some limitations to the data. Not all items of all scales are identical in both survey waves, nor are all items indentical for elementary and secondary students. The elementary level survey was shorter than the secondary school survey due to time restrictions. Some dependent measures were improved and lengthened on the second survey. The composition of the scales, factor analyses, and reliability statistics are available in the original reports or from the author.

Measure Independent Variable	Survey	Brief Description
Background		
. Gender	1, 2	Female, male
. Race	1	Black, white (obtained from survey 1 and school yearbooks for most new students in second survey)
. Parents' education	1, 2	Years of school completed for mother and for father
. Items in the home	1	23-item indicator of material possessions.
. Size of family	1	Number of siblings
. Ability Current IQ scores	2	Verbal and nonverbal scores on IQ test administered with achievement tests
Early IQ records	1	Earliest (Grade 3) IQ scores recorded on school records as available for a subsample of students.